III. REMARKS

1. Claims 25-29 are new. An Information Disclosure Statement is being submitted herewith.

2. Claims 1, 6-12 and 17-24 are not unpatentable over Lagerqvist in view of Wood under 35 U.S.C §103(a).

Claim 1 recites that it is inferred from the value of at least one **speech parameter** in the channel-decoded speech frame whether the speech frame contains speech that is decodable by means of a speech decoder. This is not disclosed or suggested by Lagerqvist in view of Wood.

Lagerqvist does not disclose or suggest examining the **"speech parameters"** themselves to determine whether the speech frame contains speech that is decodable by means of a speech decoder.

Rather, Lagerqvist discloses that soft quality parameters (Viterbi decoder metrics, estimated BER, signal strength, estimated phase error, radio signal level and CRC flags, the DVCC (Digital Verification Color Code) flag, the synchronization error and the estimated fading rate) are used for **enhancing erroneous speech frames.** Lagerqvist **does not examine the speech parameters** themselves, in order to find out whether they really contain speech. In Figures 4 and 5, Lagerqvist only describes how speech parameters (RC, LPC1-LPC10, R0) may be modified (replaced/interpolated/set) based on the soft quality values.

In the Advisory Action mailed on November 1, 2005 the Examiner states that Lagerqvist fully anticipates claimed limitations in that a channel decoder together with the soft value calculator determines if a current speech frame contains errors by checking

CRC codes and signal parameters (referring to the functionality of elements 14-15 in Figure 2). If the current frame contains errors, the soft error concealment means tries to correct the errors by using speech parameters of a previous frame for the current frame before forwarding the current frame to the speech decoder (element 16). Now, if the soft error concealment means cannot correct errors in the current frame, the current frame is muted, and the speech decoder does not need to decode the muted frame (Col. 7, line 55 to Col. 8, line 19, particularly in states 6-7 of the state machine). (see Examiner remarks in the Continuation section).

It is respectfully submitted that the Examiner's analysis of Lagerqvist is incorrect and that Lagerqvist **does not examine the speech parameters themselves**, as is explicitly recited by Applicant in the claims.

Lagerqvist discloses a speech decoder utilizing a state machine (Col. 7, line 38 - Col. 8, line 19). According to the Examiner "if the soft error concealment means cannot correct errors in the current frame, the current frame is muted, and the speech decoder does not need to decode the muted frame". This is not, however, the way the speech decoder of Lagerqvist works.

Lagerqvist discloses how the first element R0 of RC parameters of LTP (Long Term Prediction) is used in the state machine: in states 6 and 7, R0 is set to value 0, which means that no speech signal is heard. (Col. 7, line 38 to Col. 8, line 19.) No speech signal is heard, because a look-up table of the speech decoder instructs, with R0 value 0, to drop the gain of speech to zero, i.e. the speech decoder of Lagerqvist does decode the previous (see notes below) speech frame. It is only due to dropping of the gain of the speech to zero that no speech signal is heard. This presupposes that the speech decoder of Lagerqvist

considers **every speech frame decodable** and nothing in Lagerqvist discloses or suggests examining the speech parameters themselves.

Specifically, Lagerqvist states that when the "received information is considered as bad, i.e. (1) the CRC checksum is not correct, or (2) the soft quality value is lower than a threshold Q1 (see FIG. 5), or (3) the frame consists of FACCH data, the state machine moves to the next state." (Col. 7, lines 44-47). In Lagerqvist, the "expression quality value means a measurement that reflects the received quality of a block parameter or bit. If the soft quality is higher than Q1 but lower than Q3 the incoming frame data is interpolated with the last accepted frame (see FIG. 5.) However, the interpolated frame is considered as good and the speech Decoder remains in state 0." (Col. 7, lines 47-55). In states 6-7 referred to in particular by the Examiner, the RO is still set to 0. (Col. 8, lines 8-10). When the "interpolated" frame is considered as "good", the speech Decoder remains in state 0. (Col. 7, lines 53-55). (see also FIG. 4).

While Lagerqvist may touch on solving the problem Applicant's invention is addressing, Lagerqvist is not the same as, and does not disclose or suggest each feature of Applicant's invention as claimed. Nowhere does Lagerqvist state that the "current frame is muted and the speech decoder does not need to decode the muted frame" as is alleged by the Examiner in the Advisory Action mailed November 1, 2005.

Some speech codecs (the initial TETRA ACELP for example) may have such problems that if some other parameters (besides R0) have erroneous values, the speech codec may end up in a confused state, not being able to recover. In such a confused state it is not safe to feed the speech codec with speech frames even if the gain is set to zero (with R0), as in some later stage the gain

could be set to normal level. If the problems solved by the embodiments of the present invention were then manifested, an audio shock could result for example, as referred to in paragraph [0008] of Applicant's specification..

Lagerqvist refers to the Electronics Industries Association Interim Standard 54 (EIA IS-54), a part of which is annexed hereto in an IDS for the Examiner's reference and consideration. Section 2.1.3.3.2.5.2 states that a "code of zero for R0 corresponds to an energy of 0 (R(0)=0). This code can be used to totally silence the speech decoded".

Also enclosed, is a part 136-420 of TIA/EIA 136 standard, which deals with the matter as EIA IS-54. TIA/EIA 136 is a system standard, which also covers EIA IS-54 standard. Sections 1.5, 1.5.1, 1.5.2, 1.5.3, 2.2 (Table 4), 5.1.2 and 5.2.3 deal with R0.

Section 5.1.2 is of special interest as it discloses the bad frame masking routine. "The bad frame masking is based on a 6 state machine. ... State 6 implies that there were at least 6 consecutive frames which failed the CRC check. ... States 1 and 2 are simple frame repeats. States 3, 4 and 5 repeat and attenuate the speech. State 6 completely mutes the speech."

It should be noted that in order to arrive at state 6, six consecutive frames **must have** a CRC error. Also Fig. 4 of Lagerqvist shows that state 6 cannot be arrived at directly, but only through the preceding states 0 to 5. It is clearly described and illustrated in Lagerqvist that in states 1 to 6, the previous frame is repeated and attenuated. From this, of course, follows that the present frame is not decoded.

In Lagerqvist, the state machine moves to a next state if the CRC checksum is not correct, the soft quality value is lower than a threshold, or the frame consists of FACCH data (column 7 lines

44-48). Thus, Lagerqvist does not function the way the embodiments of the present invention do. Lagerqvist does not examine the **speech parameters** themselves in order to find out whether they really contain speech. However, claim 1 of Applicant's invention explicitly recites **inferring "from the value of at least one speech parameter"** if the speech frame contains speech that is decodable. Lagerqvist does not refrain from decoding the speech frame if it does not contain speech that would be decodable because Lagerqvist **does not** examine the speech parameters themselves.

Thus, unlike Applicant's invention as claimed, Lagerqvist does not examine the speech parameters themselves. While Lagerqvist may not either decode the present frame while in states 1 to 6 (a previous frame is used, as in the present application, cf. paragraph [0076]),) how Lagerqvist arrives at that decision (or states) is different from Applicant's invention as claimed. Therefore, Lagerqvist cannot fully anticipate the claimed limitations as recited by Applicant in the claims.

Wood does not overcome the aforementioned deficiencies of Lagerqvist, and the combination of Wood with Lagerqvist cannot disclose or suggest each feature of Applicant's invention as claimed, and one of skill in the art cannot come to realize Applicant's invention by the proposed combination.

Therefore, the combination of Lagerqvist and Wood does not disclose or suggest each feature of Applicant's invention as recited in claims 1, 6-12 and 17-24.

It is also noted that a Terrestrial Trunked Radio system (TETRA) does not utilize R0 or the states described by Lagerqvist. Thus, new claims 25-28 are not disclosed or suggested and should also be patentable.

3. Claims 2-5 and 13-16 should be allowable over the combination of Lagerqvist, Wood and Dunlop at least in view of their respective dependencies.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check for $1,490 is enclosed for the RCE fee ($790), a two-month extension of time ($450) and extra claim fees ($250). The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

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